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INFORMATION ON FOREST RESOURCES AND FOREST INDUSTRIES IN THE USSR

[Comment: This report gives translated extracts from an article entitled "The Soviet Union -- Forest Resources and Forest Industry" by Kjell Rikter Svendsen, which appeared in the Norwegian periodical, Norsk Skogindustri (Norwegian Forest Industry), No 10, 1955. The sources appended are those of K. R. Svendsen.]

Forest Resources

Coniferous forests extend as a broad belt from the Baltic and the Finnish border in the west to the Pacific in the east. The southern boundary of the coniferous forest extends from the west coast a little south of the Gulf of Riga, over Moscow and eastward to the Yenisey River, where it bends southward to the mountains, and then eastward to the coast between the Amur River and Vladivostok. The most important trees are larch, pine, spruce, and birch; also there are some willow, poplar and aspen trees. In the northern areas, the forest is interspersed with huge stretches of bog. Even the very cold regions east of the Lena River are to a large extent forest-covered. Here the forest is composed of larch.

South of the coniferous forest belt, there are areas of deciduous forest in both east and west. In the east, these forests do not extend far inland from the Pacific because of mountains, while in the European part of the USSR, the deciduous forest covers a cone-shaped area extending from the western border to the Urals. This forest consists of the more common Central European trees and valuable hardwoods. In the mountains of the Crimea, where more rain falls than in the lowlands to the north, the deciduous forest reappears. Here beech is important. On the southern coast [of the Crimea], sheltered from the north winds, the forest is of semitropical character, with evergreen bushes. In the Caucasian lowlands bordering the Black Sea are found deciduous forests. Here winds from the sea bring rain, and the forest is a rich mixture of beech, oak, chestnut, linden, ash, and, on the mountain slopes, some pine.

As is known, a minimum of statistics is published in the USSR. At best, statistics are published in the form of percentage figures. Since the USSR in 1953 became a member of the Timber Committee of the ECE (Economic Commission for Europe), the ECE/FAO (Food and Agriculture Organization of the United Nations) has succeeded in obtaining some data from the USSR. In this article we shall make use of UN material and of statements made officially in the USSR by forestry authorities, etc. (See list of sources at the end of this document.)

According to official Soviet information, the forest area of the USSR covers around 10 billion decares. A large part of this area lies east of the Urals, a region to which access is very difficult. It is estimated that the productive forest area amounts to 7,430 million decares, of which 4,250 million decares are counted as economically exploitable, while 3,180 million decares at present are not regarded as economically exploitable. The forest area of the USSR, which accounts for 20 percent of the forests of the world, amounts to 34 percent of the total area of the country. It is calculated that 14,470 million decares is nonforest-covered area, of which 3,500 million decares is accounted for by cultivated land. Of the 4,250 million decares of exploitable forest in the USSR, 750 million decares has not yet been touched by the ax.

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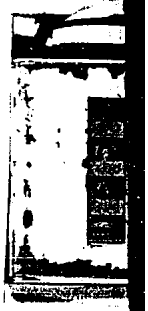

To grasp the size of these gigantic areas, it may be of interest to draw a few comparisons. The area of productive forest in the USSR is even greater than that of the US and Canada combined, which covers 6,560 million decares. Western Europe has 1,090 million decares of forest. The USSR has 38 decares of forest per capita; the world as a whole has 16 decares of forest per capita; Europe 3 decares, and North America 41 decares (here Canada and Alaska raise the average). Norway has 20 decares of forest per capita.

In FAO circles, it is calculated that systematic logging is carried on in 3,500 million decares of forest in the Soviet Union. This leaves 3,930 million decares of forest unexploited. In other words, only 50 percent of the productive forest of the USSR is directly exploited. However, this figure may be very uncertain; for, in another connection, the FAO has estimated that the exploited forest area of the USSR reaches almost 6,300 million decares.

As previously indicated, the greater part, i.e. about 80 percent of the forests of the USSR is composed of coniferous trees. Specifically, the percentages are: larch, 45 percent; common pine, 16 percent; spruce, 12 percent; birch 9 percent; sembra pine, 5 percent; silver fir, 2.5 percent; and others, 10.5 percent. These figures are largely based on estimates. Larch occurs most frequently in Siberia, and pine thrives best in the European part of the USSR and in the Urals. Most of the spruce is found in the northern European woods and in the Far East. Birch occurs in a narrow belt between the great coniferous forests of the tundra in the north and gradually becomes mixed with coniferous forest.

Concerning the age distribution of Soviet forests, the main interest is in older forest, ripe for cutting. It is calculated that in the large forests of eastern Siberia and the Far East, 80 to 90 percent of the forest is over 150 years old. According to statements made in 1951 by V. Y. Koldanov, Deputy Minister of Timber Industry USSR, 55 percent of the trees (except those planted) in the forests of the USSR are over 120 years old and ripe for felling. Only 14 percent of the trees are less than 40 years old. According to this information, enormous lumber resources will be lost to the USSR unless a very great amount of felling and renewal is begun.

More important, perhaps, than knowing the exact extent of the forest areas, is knowledge of the location of the forests. The following table shows the location of the state forests according to the Third Five-Year Plan, 1937-1942. About 1,180 million decares of forest of local importance only, in which production, in the main, consists of firewood, is not included.

The volume of standing timber in the forests of the USSR amounts to 59 billion cubic meters, including bark. This represents an average of about 9 cubic meters per decare, bark included. The corresponding figure for Europe is 7.5 cubic meters, and for North America, 7 cubic meters. The high cubic content of standing timber per decare in the USSR is probably due to the relatively large number of old, big trees which are past the age when they could have been felled. Of the total volume of 59 billion cubic meters of standing timber, coniferous forests account for about 50 billion cubic meters, and deciduous forests for about 9 billion cubic meters. In the coniferous forests, the average volume of standing timber per decare is 10 cubic meters, while in the deciduous forests the figure is 6.5 cubic meters per decare, bark included.

The gross growth increment in Soviet forests was estimated in 1950 at 750 million cubic meters, including bark. Of this, 590 million cubic meters was accounted for by the coniferous forests, and 160 million cubic meters by the pine forests [sic -- probably 160 million cubic meters by the deciduous forests is meant]. This corresponds to an average gross growth increment of 1.3 percent; for the coniferous forests, this percentage is 1.2, and for the deciduous forest, 1.8. These relatively low figures for growth increment are due to the mentioned lopsided age distribution of the trees, and represent only about one third of the increment figures for Scandinavia.

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In a survey of the forest resources of the USSR, the chapter on ownership is a very simple one. The state owns all forests within the borders of the country. However, laws and regulations exist which permit peasants and kolhoz members to gather firewood and fencing materials in local forests. When considering forestry problems in the USSR, one must remember that forestry policy is centrally directed and under the jurisdiction of organs of the government. This applies both to forestry policy and to production and industrial utilization of forest products.

Reforestation plans occupy an important place in Soviet forest policy. Forests are being planted as shelter belts in the steppes and in the forestless area in the southeast. In the years before the war, between 2 and 3 million decares were planted to forests for this purpose. In the period 1946-1950, for the purpose of combating soil erosion, plans were made to plant forests in an area as large as England and Scotland combined. The latest project of the Soviet State Planning Commission visualizes planting forests in a checkered pattern in the whole eastern area of the black earth belt -- the whole southeastern part of European Russia -- during the years 1950-1965. So far as is known, this work is going forward at full speed.

Production

It is not a simple task to form a reasonably correct picture of the size of production from the forests of the USSR from year to year. It is calculated that systematic production in accordance with the principles of forestry did not begin in the USSR until the 1920s. From the end of the 1920s, production has been regulated by the so-called 5-year plans. In these 5-year plans, felling plans have been set up which have not always been realizable.

It is calculated that in the years between the wars, the total amount of timber felled for all purposes gradually increased from 350 million cubic meters in 1929 to about 500 million cubic meters before World War II. Several sources agree that the production of timber, excluding that used for firewood, etc., in the years prior to the war reached between 125 and 200 million cubic meters. The corresponding estimate for 1946 was about 220 million cubic meters, and for 1950, between 280 and 300 million cubic meters. In 1953, the figure had increased to about 310 million cubic meters, and in 1954, to about 350 million cubic meters. These figures, as has been mentioned do not include timber felled for firewood, etc. In addition, there was production of firewood and other material used on the farms, which according to official Soviet statistics, accounts for one third of the total production. Thus, for the year 1954, the total production should have amounted to about 500 million cubic meters. This figure is between 100 and 200 million cubic meters below that which, in the opinion of ECE/FAO, is the correct figure. In these circles it is also calculated that before the war the share of the production accounted for by firewood was 65 percent, and that this share has now gone down to 50 percent.

For the year 1955, the last 5-year plan reckons with a production of 156 percent of that of the year 1950, that is, a production of timber, excluding firewood, etc., of about 470 million cubic meters. With the addition of firewood, etc., the total production would amount to about 700 million cubic meters. Experts consider it unlikely that the USSR will be able to realize all of this planned production. However, it is considered likely that the firewood share of the production will be brought down to about 40 percent, making the lumber production about 60 percent.

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The distribution of timber according to use must be based on more or less exact estimates. In 1953, it was stated that 30 percent of the timber went to sawmills, 10 percent for pulp and cellulose, 6 percent for pit props, 4 percent for railroad ties and other uses, and 50 percent for household use as unfinished building material, etc.

For various reasons, especially the shortage of equipment and transportation facilities, a relatively large portion of the production remains in the woods as waste. This portion alone is calculated at the remarkably high quantity of 70 million cubic meters annually. The percentage of logs sunk during the log floating is given as between 4 and 5 percent. It should be noted, however, that a relatively large part of the timber production is carried by railroad or truck directly to the processing plants.

A clear picture of the geographic distribution of timber production and consumption is obtained by dividing the country into four production zones.

1. The surplus zone, including the Karelo-Finnish SSR, the Belorussian SSR, the northern areas Kalinin and Ivanov, the western areas Gorkiy, Kirov, Sverdlovsk, Kuybyshev, Bashkiriya, western and eastern Siberia, Krasnoyarsk, and Omsk.

2. The self-sufficient zone, including the Leningrad area and the Far East.

3. The deficiency zone, consisting of Moscow, Tatariya, Chelyabinsk, Voronezh, Kursk, Azov, the Black Sea area, northern Caucasus, Kazakhstan, The Ukraine, and Transcaucasia.

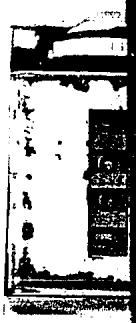
4. The forestless zone, including Saratov, Stalingrad, Chkalov, the Crimea, Kirgiz, Kara-Kalpak, and central Asia.

Timber Balance, in 1953 (in 1,000 cu m)

	Production	Consumption	From the Zone	To the Zone
Zone 1	87,531	45,847	41,992	308
Zone 2	8,764	8,763	1	--
Zone 3	11,595	46,383	--	34,788
Zone 4	378	7,275	--	6,897

From the above, it is apparent that the Ukraine and the central areas, among others, are deficiency areas. Production figures have been kept up by indiscriminate felling. But the forest protection law of 1936 forced the production in the Ukraine from 7.5 million cubic meters down to 2.5 million cubic meters. The production areas have gradually been moved north and east toward the Karelo-Finnish SSR, the Mezen Basin, the upper course of the Kama River, and Pechora, and toward the northern Urals and the Yenisey Basin.

The bottleneck in the Soviet production policy formerly was insufficient mechanization of work and shortage of skilled workers. Since the end of World War II, the picture has completely changed. During the Fourth Five-Year Plan, 1946-1950, the mechanization of production began in earnest. During this period, there were produced for use in forestry 40,000 electric saws, 12,000 tractors, 2,500 bulldozers, 14,000 trucks with trailers, 6,500 mobile electric power stations, 470 locomotives for narrow-gauge railroads, 2,000 loading cranes, 1,420



motor locomotives, etc. The most important factor was, perhaps, the training of workers, which was begun with great intensity after the war. In 1950, production work was about 40 percent more mechanized than in 1946, and, since 1950 this work has been carried forward.

Lumber-Mill Industry

The Soviet lumber-mill industry has great traditions. Even with a practically inexhaustible domestic demand, this industry grew to become very important in providing exportable goods before World War II.

In old Russia, the greater part of the lumber-mill industry was located in the west, in the Ukraine, Belorussia, and in the western provinces. At that time, Arkhangel'sk had not yet become significant as an export center, and only an unimportant part of the industry was concentrated in that area. The largest lumber-mills were located along the rivers in the vicinity of Lake Ladoga and Lake Il'men. The Urals and the country to the east were terra incognita. In the European part of the USSR, in the beginning of the 1930s, the lumber-mill industry was concentrated mostly within five main production areas. The most important of these were the northern and northwestern areas, centered in Arkhangel'sk, the Karelian White Sea ports, the cities on the southern shore of Lake Ladoga, and Leningrad. From these places most of the lumber was shipped for export. The western area was also important. The relatively short railroad transport distances to the consuming centers of Central Europe caused a considerable lumber-mill industry to grow up in western Ukraine and the Belorussian SSR. The region around the sources of the Volga and its tributary, the Vyatka, constituted the fourth area. Here the lumber-mill industry had, and still has, the task of supplying the forest-poor southern districts. The fifth area consisted of the Transcaucasus [Soviet] republics, from which mostly oak lumber was shipped. In addition, lumber mills were scattered all over the European part of the country, but these were mostly of local importance.

In Siberia, the lumber-mill industry was localized on the eastern shore of the Yenisey, and in the Far East, in the valley of the Ussuri River. Here the lumber mills were, on the whole, small, and served local needs.

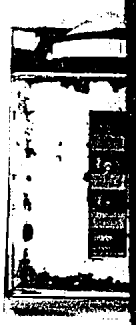
Gradually, the forests around the traditional lumber-mill districts became very much thinned out, and the industry began to reveal the shortage of raw materials. Therefore, a movement of the lumber-mill industry to the east was begun. The necessity for moving the heaviest concentration of the lumber-mill industry is apparent from the following comparison between the number of saw frames and the raw material supply in the various zones during the years before the war (see the previously mentioned division into zones):

The surplus zone had 91 percent of the timber supply, but only 37.4 percent of the number of saw frames.

The self-sufficient zone (expanded to include the regions of Leningrad, Moscow, Kalinin, Ivanov, Kuybyshev, Belorussia, Bashkiriya, Tatariya, and Kazakh) had 6.2 percent of the timber supply and 39 percent of the saw frames.

The deficiency zone had only 2.8 percent of the timber supply, but 24 percent of the number of saw frames.

The decree of 1936 concerning protected forests, making raw material unobtainable, to an even higher degree, for the lumber-mill industry in the west and southwest, furnished the final impulse for the movement of the lumber-mill industry toward regions richer in forests.



The most important new areas are:

1. The vast forest regions of eastern Karelia, with shipping ports in Murmansk, Kem', Kovda, and Keret.

2. The hitherto very little exploited forest areas around the Onega, the Dvina, and the Mezen' rivers, with the shipping ports Onega, Arkhangel'sk, and Mezen'.

3. The great, almost untouched, forests around the Pechora River and its tributaries, and the northern Urals around the upper course of the Kama River, having for a shipping port the newly constructed port of Naryan Mar, located on the Barents Sea near the mouth of the Pechora River.

4. The virgin forests around the Ob' and Irtysh rivers in northwestern Siberia, with the export port of Salekhard at the mouth of the Ob'.

5. The vast forest areas around the Yenisey River and its tributaries, the Angara and the Tunguska in Central Siberia, with the shipping ports Igarka and Dudinka.

6. The area around the Amur River in eastern Siberia, with shipping possibilities in nearby Pacific ports.

These areas are considered in extensive planning for the construction of new canals, roads, and railroads.

In the Ob' basin, a colossal effort had been begun immediately before the outbreak of the war to establish a lumber-mill industry with an [annual] capacity of 300,000 standards [standard is a cubic measure equal to 165 cubic feet], equal to the annual Norwegian production in 1945. It was planned to export only a small part of this production.

Similarly, in the Yenisey basin, the lumber mill capacity was to be expanded to approximately 0.5 million standards of sawn lumber [annually]. In Yeniseysk alone, three new lumber mills were being built, each having eight saw frames, and a total capacity of about 300,000 standards.

In the Lena basin, work was begun on the construction of a 6-frame lumber mill which was to supply the needs of local industry, one 4-frame lumber mill and one 3-frame lumber mill. In addition, the ground was prepared for a number of other new lumber mills.

Developments in the area around the upper course of the Kama River, the Pechora, and the northern Urals show, in part, the same expansion. In the Amur area, the lumber-mill industry has, perhaps, undergone the most explosive development. As late as the 1920s, this area had no lumber-mill industry, while today it is one of the most important lumber mill areas of the USSR.

The USSR production of sawn lumber reached considerable size before World War I. Of Western Europe's net import of 1.5 million standards of sawn lumber in 1913, Russia supplied 1.3 million standards. During the 1930s, the Soviet Union's export of sawn lumber again reached 1.4 to 1.5 million standards. It is calculated that in the years before World War II, the total production of sawn lumber reached a total of about 8 million standards. Most of this production went toward covering the ever-increasing domestic demand.

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Since the end of the war, this condition has become very apparent. In 1947, the export of sawn lumber from the USSR had diminished to a trifling 30,000 standards. At that time, the USSR imported from its satellites more lumber than it exported. During this period, the total production hardly exceeded 6 million standards. It is estimated that at the end of the 1940s, the production of sawn lumber in the USSR reached the prewar level, and since then production has been greatly expanded. According to FAO sources, it has reached 15 million standards annually, which is about 25 percent of the total world production. Even with this huge production, the export is relatively modest. As late as 1954, it did not exceed 300,000 standards.

Viewed against this background, it may seem doubtful that Europe can count on obtaining from the USSR the approximately one million standards of sawn lumber which the FAO calculates Europe will need in the 1960s to cover its requirements. This quantity can hardly come from the area around Arkhangelsk or from the Baltic coast as was formerly the case. Nor can this amount of sawn lumber be exported from the Pacific coast. This lumber must, therefore, come from Siberia, or from the more remote regions of the European USSR bordering on the Barents Sea. Largely, then, it becomes a problem of transportation. A large part of the new west Siberian lumber-mill industry is evidently constructed with a view toward future export. This will probably become an actuality when, and if, the northern seaway is developed. In this connection it should be remembered that a state-directed forest industry, such as that of the USSR is not forced to consider such factors as profits, etc.

In the woodworking industry, plywood manufacturing, match manufacturing, and prefabricated housing occupy important places. The plywood industry is located mostly in Belorussia, the Ukraine, and the Leningrad area. These sections suffered heavy war damage. This is evident in the fact that not until 1950 did production reach the prewar level. The plywood industry has not moved eastward to the same extent as other woodworking industries, although a certain number of factories have been built in western Siberia and, especially, in the Urals where the Tavda Plant is located. The Soviets call the Tavda Plant the world's largest plywood factory. Even in the Far East, plywood factories have been built, but the old plywood factory centers are still the most important ones to this industry: for, in these old areas are found the greatest birch forests in the USSR. In 1940, the production of plywood amounted to a little over 700,000 cubic meters, and in 1950, to a little under 700,000 cubic meters. At present, production is probably approaching one million cubic meters annually, or about 15 percent of the world production of plywood.

Long before World War II, the match factories maintained a relatively stable production of 10.5 billion boxes. This production was not attained again until 1950.

A relatively new branch of the wordworking industry is the manufacture of standardized wooden houses. One of the largest plants is located in Kirov; others are in Pestovo, Parfino, and in other places, mostly in the western part of the USSR. Petrozavodsk has a factory with a capacity of 50 wooden houses per month. According to the plans, housing with 4.2 million square meters of floor surface was to have been produced by this industry in 1950. However, the demand is enormous. Since the war, the USSR has imported considerable quantities of wooden housing from Finland (among other things) as reparations deliveries.

The wallboard industry is relatively new and modest, with an annual capacity of about 150,000 tons. As a comparison, the wallboard production of North America is about ten times as large.

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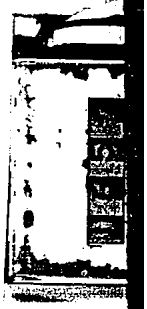

Wood-Processing Industry

The Soviet wood-processing industry is very modest considering the gigantic forest resources at the disposal of the state. Seen against the background of the industrial development of the USSR this is not so very surprising, although a greater stress on the wood-processing industry might have been expected. Much of the explanations probably is to be found in the fact that wood-processing is one of the light industries, which hitherto have been notoriously overshadowed by heavy industry. In addition, the domestic demand for wood-processing products has in the past years been ruthlessly kept down.

The USSR production accounted for only 5.5 percent of the 1953 total world production of wood pulp and cellulose. The corresponding figure for Europe was 28 percent, and for North America, 61 percent. Similarly, the Soviet production of newsprint amounted to only 4.5 percent of the world production, while that of Europe was 28 percent, and of North America 61 percent. The share of other paper, produced by the USSR was about 5.5 percent, compared to 36 percent for Europe and 49 percent for North America. In the case of cardboard and carton, the figures were even more lopsided, the USSR producing 3.5 percent, Europe 19 percent, and North America 72.5 percent of the world production.

The first foundations of the Russian wood-processing industry were laid near the end of the 19th Century. At the turn of the century, there were 170 paper factories in Russia, according to Bol'shaya Sovets Kaya Entsiklopediya (Large Soviet Encyclopedia). In 1913, there were in Russia 212 paper factories, employing a labor force of over 14,000 men. At that time, about 43 percent of the paper and cardboard production was manufactured in the Baltic countries and in the area around the Gulf of Finland. About one half of the semifinished products also came from this area.

The Revolution and World War I disorganized the Russian wood-processing industry, and not until 1925 was the 1913 level of production regained. During the next 5 years, Soviet wood processing production remained on an unchanged level, but beginning in 1930, the foundation was laid for the new, modern Soviet wood-processing industry. The first large Soviet kraft paper factory, for example, was established in 1930.

Among the most important wood-processing plants built during the First Five-Year Plan was Europe's largest newsprint factory at Balashinsk on the Volga, erected in 1928. In 1929, the plant of the Kondopoga Combine (making both sulfate cellulose and sulfite cellulose) was built near Lake Onega. The great cellulose and paper plant at Vishersk in Belorussia was built in 1931. This plant produces both newsprint and writing paper. Next came the large sulfate cellulose plant in Solombal'sk in 1935, the writing-paper and school materials factory on the Kama River, a tributary of the Volga, in 1936, and the technical paper mill in Marinsk in the Leningrad district, in 1938. In 1939, the USSR's largest paper bag factory was built in Segersk on Lake Onega. In 1940, the large sulphate cellulose mill in Arkhangel'sk was built, and in 1941, the sulphate cellulose mill in Solikamsk in the Urals was completed. In the same year in which the war against Germany began, the writing-paper and printing-paper mill was built in Ingura in western Siberia.

During this period a notable expansion of the Soviet wood-processing industry took place. After the war, the problem of reconstructing the large part of the industry which had been put out of production during the war had to be faced. Today, it is estimated that this industry is not only rebuilt, but that a considerable expansion has taken place in the form of new construction and modernization of already existing plants. In 1948, the information was given that production in the paper industry of the USSR had reached the prewar level.

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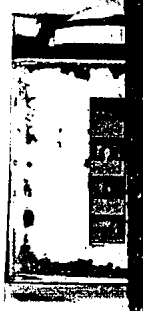

In territories ceded by Finland to the USSR at the end of the war, the USSR obtained, in addition to 32 million decares of forest, eight wood-processing enterprises. The capacity of these installations amounted to about 35,000 tons of wood pulp, about 125,000 tons of sulfite cellulose, about 50,000 tons of sulfate cellulose, all reckoned in dry weight, 40,000 tons of paper and cardboard, 150,000 standards of sawn lumber, and 40,000 cubic meters of plywood.

Since the end of the war, new newsprint mills have been built in Solikamsk, in Kamengorodsk on the lower Volga, in Nemansk in the Kalininskaya oblast, and new carton and cardboard mills have been built in Zhidatchovsk, in Rachva in the Carpathians, in Lvov in the Ukraine, and in Klaypeda. Also among new plants added to the Soviet wood-processing industry are the paper mills found in southern Sakhalin, taken from Japan during the last war.

In the case of the wood-processing industry, it is plainly evident that this industry also has purposely been shifted toward the great forested areas in the north and east. The most important production areas are Karelia and the northwestern area, with large plants in Arkhangel'sk, Balana, Solombala, Kontupuhoya [Kondopozhsk?], in the areas ceded by Finland, and in the Mariyskaya ASSR and the Kama Basin. The Urals also have a new paper industry, among others, the large Lyalya Combine; in the Caucasus there is a quite large combine, the Inguriy.

Around 1930, the annual production of paper in the USSR was estimated at about 300,000 tons. Up to 1940, the production increased to about 900,000 tons, and in 1950, it was, according to the 5-year plan 1.4 million tons. Even though development has proceeded at an impressive speed, the production is not sufficient to cover the constantly increasing domestic demand.

According to the latest FAO information, the total 1953 production of wood pulp and cellulose in the USSR was 2.1 million tons, dry weight. Of this, one half was wood pulp. In the same year, the newsprint production was estimated at 450,000 tons, while the total of other paper reached 1.2 million tons. In addition, about 550,000 tons of cardboard and carton was produced. The planned total production for 1953 of paper, cardboard, and carton was 1.6 million tons. At present, the USSR imports no significant quantities of processed wood products.

Actual newsprint production in the USSR represents a per capita consumption of 2 kilograms. It is stated that the planned production of newsprint in the USSR in 1955 will be 570,000 tons, in 1960, about 700,000 tons, and in 1965, about one million tons.

A notably large part of the paper production of the USSR is consumed in the government propaganda and information activities. Bol'shaya Sovetskaya Entsiklopediya asserts that this share reaches 55 percent. At least 10 daily newspapers each have circulations of 2 million copies or more. In addition, a very great number of weeklies and monthlies have circulations of several hundreds of thousands of copies. The well-known propaganda brochures are issued in millions of copies at regular intervals. Speeches by Soviet leaders are often published in brochure form in printings of 5-10 million copies.

Research efforts in the wood-processing industry in the USSR have high priorities compared with the case in many other countries. The All-Union Scientific Research Institute of Wood-Processing Industry was founded in 1930. It has at its disposal large laboratories in Moscow and Leningrad, and its scientific equipment is known to be very modern and comprehensive.

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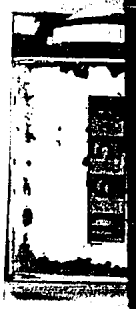


In addition, the Soviets since the end of the war have started a special research institute, TsNIIMOD (Central Scientific Research Institute for Mechanical Wood-Processing), for mechanization of the wood-processing industry. This institute is said to be supplied with the most modern technical equipment, and has gradually gained considerable importance.

Despite the fact that the wood-processing industry of the USSR can look back upon a notable expansion during the postwar years, Soviet experts are not completely satisfied. The paper production in 1954 was 2.3 times the size of that of 1940; the corresponding figure for cardboard was 4.9; for silk cellulose, 3.2; and for the remainder of the pulp and cellulose industry, 1.9.

It is maintained that the main reason for the rate of expansion not having been great enough in these years is that capital investments have not been large enough, and that there has been a shortage of equipment and parts for equipment. It is expected that these conditions will gradually improve, and that the Soviet wood-processing industry will be more intensely developed in the coming years.

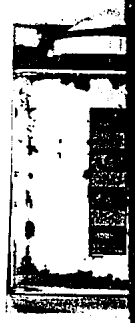
Observations

A constantly recurring theme, leaving much room for speculations, is whether and to what extent the USSR, in the foreseeable future, will appear in the world markets with the products of its forest industries. It is very difficult on the basis of available material to form a reasoned opinion on this important question. However, some features of the picture are quite clear, and may be summed up as follows:

The USSR has at its disposal timber resources in superabundance, and, in addition, the lopsided age distribution of the trees affords the opportunity for the felling of huge quantities during the next few years. However, to a great extent the forests are very inconveniently located in relation to world markets. Export from these regions would exact great transportation costs, even if a good transportation system were established. If the plants are located in the forested regions, which is being done, the same would apply to the finished products. The forest industries have, on the whole, ample resources of potential power, but hitherto have been hampered by shortages of equipment and capital. However, expansion up to the present has been impressive, and will probably continue at the same rate. The total capacity is nevertheless, extremely modest in relation to the domestic demand, which is still notably unsatisfied. As the most important factor, it must be remembered that every Soviet trade policy maneuver is decided on the centrally directed state plane and is affected by political motivations, although economic factors may play a certain role. Similarly, domestic consumption is at all times decided on the political plane.

Since the end of the war, Soviet exports of forests products have had no practical significance, despite the fact that before the war lumber exports were very extensive and that present production is above the prewar level. Thus, up to now, all production in the forest industry sector has been consumed on the domestic market.

The per capita consumption of lumber in the USSR is at present about 0.3 cubic meter annually, that is, somewhat lower than that of Norway, but on a level with that of Sweden. On the other hand, the consumption of wallboard and other substitute materials is very low in the USSR. Up to now, the high consumption of lumber has been concentrated in the gigantic postwar reconstruction. To the extent that consumption might slacken and production might increase, the possibility of a resumption of Soviet lumber exports might be present.



The Soviet annual per capita consumption of paper, cardboard, and carton is at present about 8 kilograms, as compared with about 70 kilograms in Norway, and about 175 kilograms in the US. The average Soviet citizen consumes the modest quantity of 2 kilograms of newsprint annually, compared with the Norwegian annual per capita consumption of about 10 kilograms. There should then, be room for domestic expansion on a large scale. To attain a domestic consumption at the present Norwegian level, the Soviet wood-processing industry would have to produce an estimated 14 million tons of paper annually, or about ten times the present production. Seen against this background, the possibilities for export may seem to appear as something of a "dream of the future." However, to produce the 50 million cubic meters of timber required to manufacture the 14 million tons of paper mentioned would probably present no difficulties if the mills were located mainly in the north and east.

The present consumption of timber, excluding firewood, etc., in the USSR calls for the felling of about 500 million cubic meters [annually]. In addition, firewood, etc., accounts for about 200 million cubic meters. The gross annual growth increment in the coniferous forests has been set at about 600 million cubic meters, and in the deciduous forests, at a little over 150 million cubic meters.

It is difficult, on the basis of these increment figures only, to arrive at any conclusion, concerning the possibilities of increasing the present total timber production in the USSR. As previously mentioned, the age distribution [of the trees] is of material importance. If the difficult locations of the timber resources, the great distances, and the transportation difficulties are considered, it begins to seem that the raw materials resources are limited.

In summation, it may seem that the USSR in the long run wishes to keep the processing of its national timber resources within its own economy, and is aiming to build up a forest industry, the primary function of which will be to supply the domestic market and next gain a capacity which would amount to something in the world market. But it would certainly be wise to be prepared for decisions concerning production, domestic consumption, and export being made on the political level, and for changes in these decisions whenever the political powers consider it opportune. Given a sufficiently developed wood-processing industry, an export offensive, even at a modest cost to domestic consumption the USSR might tangibly affect smaller countries which export wood products, for example, Norway.

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